

## PATENT ABSTRACTS OF JAPAN

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(71)Applicant : NEC ENGINEERING LTD

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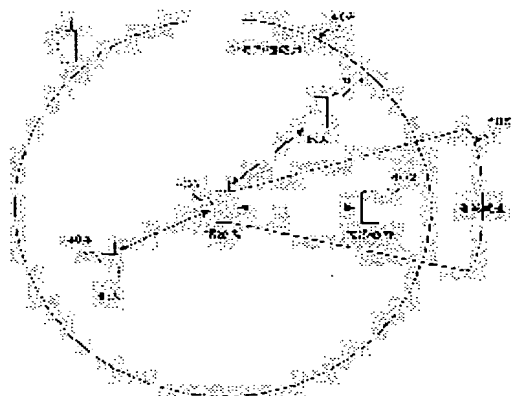
(72)Inventor : SASAKI HIROSHI

**(54) ILLEGAL PHOTOGRAPHING PREVENTING SYSTEM**

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide an illegal photographing preventing system which can prevent a sneak photography from being taken by a portable terminal with a camera such as a digital camera, a portable telephone with a camera or the like in a place having a large noise or a crowded place such as busy streets, an electric car or the like.

**SOLUTION:** The illegal photographing preventing system includes a terminal with a camera having a means for informing a person or a subject in the circumference photographing in the case of photographing, and a terminal having a means for controlling a photographer terminal with the camera by sensing the photographing.



## LEGAL STATUS

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CLAIMS

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[Claim(s)]

[Claim 1]

It is the unjust photography prevention system carry out that have the signal dispatch section which sends out a signal during the photography which shows that said photography side personal digital assistant is under photography at the time of photography in the unjust photography prevention system which consists of a photography side personal digital assistant which has a photography function, and a photographic subject side personal digital assistant, and said photographic subject side personal digital assistant has the photography refusal section send out the photography refusal signal will carry out the photography function of said photography side personal digital assistant to an invalid if a signal receives during said photography as the description.

[Claim 2]

In the unjust photography prevention system which consists of a photography side personal digital assistant which has a photography function, and a photographic subject side personal digital assistant,

It has the photography side signal dispatch section which sends out a signal during the photography which shows that said photography side personal digital assistant is under photography by ON actuation of the switch section which carries out ON/OFF of the photography mode, and said switch section, the photography side signal receive section which receives the signal sent out from said photographic subject side personal digital assistant, and the shutter section will perform photography if a depression is carried out at the time of said switch section ON,

Said photographic subject side personal digital assistant is the unjust photography prevention system carry out having the photographic subject side signal receive section which receives a signal during said photography, the setting modification section which sets up whether photography actuation of said photography side personal digital assistant at the time of signal reception is permitted during said photography, the setting storage section which memorizes the set point of said setting modification section, and the photographic subject side transmitting section which send out the set point of said setting storage section outside as the description.

[Claim 3]

Said photographic subject side personal digital assistant is an unjust photography prevention system according to claim 2 characterized by having the report section which notifies having received the signal during said photography to a photographic subject.

[Claim 4]

The unjust photography prevention system according to claim 2 characterized by having the pole section which changes to a \*\*\*\*-ed [ said ] side personal digital assistant, is installed near the photographic subject, sends out the photography refusal signal which refuses the photography enabling signal or photography which permits photography, and forms the area which can be photoed, or photography prohibition area.

[Claim 5]

It is the unjust photography prevention system according to claim 4 characterized by giving

priority to said photography enabling signal when said photography side personal digital assistant receives both said photography enabling signal and said photography refusal signal.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention]

Especially this invention relates to the unjust photography prevention system of personal digital assistants with a photography function, such as a digital camera and a cellular phone with a camera, about an unjust photography prevention system.

[0002]

[Description of the Prior Art]

In recent years, the miniaturization of personal digital assistants, such as a digital camera and a cellular phone with a camera, progresses, and while becoming convenient that it is easy to carry, invasion of privacy, such as \*\*\*\*, is social concerns. Therefore, as a technique of preventing \*\*\*\* by such miniature camera, when taking a photograph with a camera, a beep sound is taken out from a camera, and the system which notifies that a photograph is taken by the man of the range which a beep sound reaches, the system which prevents \*\*\*\* by using a beep sound and a light together are developed.

[0003]

In addition, by JP,10-031265,A, the technique to which the beep sound which shows that an image pick-up is performed to the candidate for an image pick-up or that the image pick-up was performed is generated, and cautions are urged is indicated as this kind of a conventional technique.

[0004]

Furthermore, in JP,2001-313006,A, although it is not visible to people, the technique of protecting a photographic subject from photography with a \*\*\*\* camera is indicated by carrying out infrared light which carries out a light-receiving reaction at a camera above in a certain amount of strength, and irradiating it outside from a photographic subject. Furthermore, the technique which makes impossible photography of the range of the radius centering on an irradiating point of the light again to the photography from the direction-of-radiation (for example, head and thorax) front using the luminescence object which emits infrared radiation to the light source by drawing light to the photographic subject front with direct or an optical fiber is indicated.

[0005]

[Problem(s) to be Solved by the Invention]

However, there are the following troubles in the system of these former. Since the camera which takes a photograph has generated the beep sound, the 1st trouble is not helpful, and by \*\*\*\*\*, I hear that the inside of shopping quarter or an electric car etc. is unknown in who took, and it has it in the location where the noise is big.

[0006]

When continuing making a beep sound during photography and the 2nd trouble photos the animation containing voice, it will be recorded together, and I hear that a beep sound is also difficult and photography of the photographic subject of the bird which can be photoed only in the quiet condition has it.

[0007]

When taking out warning only at once at the time of photography initiation, since it can be photoed by approaching a photographic subject after it makes a beep sound with somewhere else, I hear that the 3rd trouble cannot prevent \*\*\*\* and there is.

[0008]

When making a beep sound at the time of photography termination, since it separates from a photographic subject and can end camera photography, I hear that the 4th trouble cannot prevent \*\*\*\* and there is.

[0009]

When irradiating infrared light outside from a photographic subject and protecting a photographic subject from photography with a \*\*\*\* camera, if it is necessary to turn light in the direction of a \*\*\*\* camera and the direction of a camera is not known, I hear that the 5th trouble cannot prevent \*\*\*\* and there is.

[0010]

If the 6th trouble irradiates in all the directions centering on a photographic subject, it needs to be clothed in the tool which irradiates light at the whole body on the body, and I hear that it is troublesome on everyday life, and there is.

[0011]

This invention is made in view of the above-mentioned problem, and this invention aims at offering the unjust photography prevention system which can prevent \*\*\*\* by personal digital assistants with a photography function, such as a digital camera and a cellular phone with a camera, also by the big location and big \*\*\*\*\* of the noise of shopping quarter, an electric car, etc.

[0012]

Moreover, other purposes of this invention are offering the unjust photography prevention system which can photo a photographic subject, even when it prevents that the beep sound for \*\*\*\* prevention is recorded during photography when photoing the animation containing voice and it can be photoed only in the quiet condition.

[0013]

Moreover, other purposes of this invention are offering the unjust photography prevention system which prevented unjust photography even when the direction of a camera was not found, and was excellent in portability.

[0014]

[Means for Solving the Problem]

In the unjust photography prevention system by which the unjust photography prevention system of this invention consists of a photography side personal digital assistant which has a photography function, and a photographic subject side personal digital assistant said photography side personal digital assistant It carries out having the signal dispatch section which sends out a signal during the photography which shows that it is under photography at the time of photography, and having the photography refusal section which sends out the photography refusal signal which will make an invalid the photography function of said photography side personal digital assistant if said photographic subject side personal digital assistant receives a signal during said photography as the description.

[0015]

[Embodiment of the Invention]

Next, the 1st operation gestalt of the unjust photography prevention system of this invention is explained to a detail with reference to a drawing. Drawing 1 is the explanatory view showing the class and function of the personal digital assistant in the unjust photography prevention system of the 1st operation gestalt of this invention. The unjust photography prevention system of this operation gestalt consists of a personal digital assistant with a camera by the side of photography, and a personal digital assistant for general by the side of a photographic subject (with no camera existence relation), as shown in drawing 1.

[0016]

The personal digital assistant with a camera by the side of photography is equipped with the

function which sends a signal during photography at the time of camera photography. A signal is a feeble signal which shows that it is in the condition which can photo a personal digital assistant with a camera during photography.

[0017]

On the other hand, the common personal digital assistant by the side of a photographic subject can set up the following three actuation as actuation at the time of receiving a signal during photography from the personal digital assistant with a camera by the side of photography.

- 1) If a signal is received during photography, a photography refusal signal will be sent.
- 2) If a signal is received during photography, you will be told about by the sound / light / vibration / display.
- 3) A signal is disregarded during photography.

Therefore, the unjust photography prevention system of this operation gestalt may be photoed any time, when a signal is set as disregard during photography.

[0018]

Drawing 2 is the block diagram showing the configuration of the personal digital assistant with a camera in the unjust photography prevention system of the 1st operation gestalt. Reference of drawing 2 constitutes the personal digital assistant with a camera from the camera mode switch 201, a signal oscillator 202, the shutter control section 203, a shutter 204, the signal receiver 205, the image storage control section 206, a lens 207, storage 208, and a monitor 209.

[0019]

The camera mode switch 201 is a switch turned ON first, when a user takes a photograph with a camera. If this camera mode switch 201 is turned ON, a signal will be sent during photography from a signal oscillator 202, and a shutter 204 will become effective by the shutter control section 203 at coincidence.

[0020]

A signal oscillator 202 will send a signal during photography to the exterior of a personal digital assistant, if the camera mode switch 201 is turned on. The shutter control section 203 will confirm a shutter 204, if the camera mode switch 201 is turned on. Moreover, when the signal receiver 205 receives a photography refusal signal, it changes to a condition with an invalid shutter 204 by the shutter control section 203, and photography becomes impossible.

[0021]

A shutter 204 can be photoed by carrying out the depression of the shutter 204, while the valid signal from the shutter control section 203 turns on. The signal receiver 205 is notified to the shutter control section 203, when a photography refusal signal is detected from a perimeter. Thereby, it changes to a condition with an invalid shutter 204, and photography becomes impossible.

[0022]

The image storage control section 206 transmits the image information which obtained the shutter 204 from the lens 207 by carrying out a depression to storage 208. A lens 207 is a camera lens and transmits the image information of a photographic subject to said image storage control section 206. Storage 208 carries out the reception storage of the image information transmitted from the lens 207 when the shutter 204 was pushed from the image storage control section 206. A monitor 209 displays the image information from a lens 207. Moreover, the image information memorized by storage 208 is also displayed.

[0023]

Drawing 3 is the block diagram showing the configuration of the common personal digital assistant of the 1st operation gestalt. Reference of drawing 3 constitutes the common personal digital assistant from the setting modification section 301, the setting storage section 302, a signal receiver 303, a signal oscillator 304, and the signal reception report section 305.

[0024]

The setting modification section 301 is a means to set up beforehand actuation ( drawing 1 publication) of the common personal digital assistant when detecting a signal during photography. The setting storage section 302 memorizes the set point inputted in the setting modification section 301, and when a signal is detected during photography with the signal receiver 303, it

directs the actuation according to a setup. For example, actuation by the photography refusal signal dispatch for photography refusal, a sound / light / vibration / display for the notice of photography, etc. is directed in a signal oscillator 304 and the signal reception report section 305.

[0025]

The signal receiver 303 is notified to the setting storage section 302, when a signal is received during the photography from a surrounding personal digital assistant. A signal oscillator 304 sends a photography refusal signal, when there is a photography refusal signal dispatch demand for photography refusal from the setting storage section 302. The signal reception report section 305 carries out actuation, when there are operational requests, such as a sound / light / vibration / display for the notice of photography, from the setting storage section 302.

[0026]

Next, actuation of the 1st operation gestalt is explained to a detail with reference to a drawing. Drawing 4 is the explanatory view showing the system outline of this operation gestalt. In drawing 4, when the photography person 401 photos the person 402 taken a photograph, a signal is transmitted during photography so that a ball may be drawn focusing on the photography person 401. A signal is received by breadth, the person 402 taken a photograph, and the surrounding personal digital assistant owner 404 to the signal attainment range 403 during photography. Each personal digital assistant which received the signal during photography performs actuation ( drawing 1 publication) beforehand set up by each user. In a setup whose setting storage section 302 ( drawing 3 publication) transmits a photography refusal signal, a photography person's camera photography can be made impossible and, in a setup which tells further that a photography person is in near, photographic coverage 405 can be escaped by telling an owner by light / sound / vibration / display.

[0027]

Drawing 5 is the flow chart Fig. showing actuation of the personal digital assistant with a camera which a photography person owns. First, a photography person turns ON the camera mode switch 201 at the time of camera photography (step 501). A signal is transmitted to a perimeter during photography from a signal oscillator 202 by ON of the camera mode switch 201 (step 502), and a shutter 204 becomes effective (step 503). Then, it supervises whether the shutter 204 was pushed, or, when it makes a judgment (step 504) and the photography refusal signal is not received, and when [ to which the personal digital assistant with a camera received the photography refusal signal ] (step 505).

[0028]

When judging whether photography is ended when the shutter 204 is not pushed (step 507) and not ending photography, processing of return, step 505, and step 507 is repeated to step 504.

[0029]

When a shutter 204 is pushed at this time, a photograph is taken (step 506) and after photography repeats step 504, step 505, and step 507. When a photography refusal signal is received by photography refusal signal reception decision (step 504), a shutter 204 is made into an invalid (step 509), the camera mode switch 201 is turned OFF (step 510), and transmission of a signal is automatically stopped during photography (step 511).

[0030]

Moreover, by photography termination decision (step 507), also when it becomes photography termination, a shutter 204 is made into an invalid (step 509), the camera mode switch 201 is turned OFF (step 510), and transmission of a signal is automatically stopped during photography (step 511).

[0031]

Drawing 6 is the flow chart Fig. showing actuation of a common personal digital assistant with a photography control function. The common personal digital assistant in a standby condition checks the existence of signal reception during photography (step 601). If a signal is received during photography, it will judge whether photography is refused with the set point of the setting storage section 302 (step 602),

When being set up at this time so that photography may be refused, a photography refusal signal



is transmitted (step 603). Next, it judges whether the set point of the setting storage section 302 informs an owner (step 604), and when being set up at this time so that an owner may be notified, light / sound / vibration / display informs an owner (step 605).

[0032]

Drawing 7 is the explanatory view showing the system configuration of the gestalt of operation of the 2nd of this invention. Although the hitcher on etc. is defending those who are going to photo the display object of the ban on photography when there are a display object which can be photoed, and a display object of the ban on photography in an exhibition hall etc., as shown in drawing 7, the pole 701 which sends a photography refusal signal, and the pole 702 sent in a photography enabling signal are stood, and the area 703 which can be photoed, and the photography prohibition area 704 are distinguished. A photography enabling signal is a signal which has priority highly from a photography refusal signal, and when both a photography enabling signal and a photography refusal signal are received, it makes photography possible here.

[0033]

Drawing 8 is the flow chart Fig. showing actuation of the personal digital assistant with a camera in the gestalt of the 2nd operation. First, a photography person turns ON the camera mode switch 201 at the time of camera photography (step 801). A signal is transmitted to a perimeter during photography from a signal oscillator 202 by ON of the camera mode switch 201 (step 802), and a shutter 204 becomes effective (step 803).

[0034]

Then, it supervises whether the shutter 204 was pushed, or, when it makes a judgment (step 804) and the photography refusal signal is not received, and when [ to which the personal digital assistant with a camera received the photography refusal signal ] (step 805). When whether photography is ended when the shutter 204 is not pushed judges (step 807) and it does not end photography, step 804, step 805, and step 807 are repeated.

[0035]

When a shutter 204 is pushed at this time, a photograph is taken (step 806) and after photography repeats step 804, step 805, and step 807. If it judged whether the photography enabling signal would be received (step 809) and the photography enabling signal is received by photography refusal signal reception decision (step 804) when a photography refusal signal is received, it will move to whether the shutter 204 was pushed and the step (step 805) to supervise.

[0036]

By decision (step 809) whether the photography enabling signal is received, when the photography enabling signal is not received, a shutter 204 is made into an invalid (step 810), the camera mode switch 201 is turned OFF (step 811), and transmission of a signal is automatically stopped during photography (step 812).

[0037]

Moreover, by photography termination decision (step 807), also when it becomes photography termination, a shutter 204 is made into an invalid (step 810), the camera mode switch 201 is turned OFF (step 811), and transmission of a signal is automatically stopped during photography (step 812).

[0038]

Moreover, since a shutter 204 will become an invalid (step 810) and photography mode will be turned off if it comes out from photography authorization area even when the animation is being photoed moving (step 811), photography is stopped. It becomes possible to prevent unjust photography by the above, without employing a help.

[0039]

The system by this invention besides the above-mentioned operation gestalt is also utilizable as follows. For example, he can feel easy by installing the personal digital assistant which has a photography control function beforehand at the inside of an electric car, a department store, etc., and can use an electric car, and some shopping can be done at a department store. Moreover, \*\*\*\* of goods can also be prevented at a department store. Moreover, with this

operation gestalt, since it can notify by the sound / light / vibration / display if a signal is received during photography, while being able to discover easily those who are doing the photography action, work of the suppression effectiveness is also expectable by notifying in advance the thing which have a photography control function and which is being done for personal digital assistant installation.

[0040]

[Effect of the Invention]

This invention does so effectiveness which is indicated below. The 1st effectiveness can prevent unjust photography with personal digital assistants with a camera, such as a digital camera and a cellular phone with a camera, for the inside of shopping quarter or an electric car etc. also by the big location and big \*\*\*\*\* of the noise. The reason is because a photography refusal signal is sent and it enabled it to make photography stopped, when it sends by the feeble signal that a beep sound is not made but it is under photography to a perimeter and the signal is received.

[0041]

The 2nd effectiveness is also enabling photography of the photographic subject of the bird which can be photoed only in the quiet condition. The reason is because a feeble signal is sent and the perimeter was told about being under photography rather than making a beep sound.

[0042]

The 3rd effectiveness can prevent unjust photography, even when the direction of a camera is not known. The reason is for spreading round a perimeter everywhere in order to send signals which have directivity in order to carry out photography refusal, such as infrared light.

[0043]

The 4th effectiveness can reduce the hitchers on for preventing unjust photography in an exhibition hall. Although the reason must prevent a photography action by the security camera, a hitcher on, etc. in photography prohibition locations, such as a show, it is because it is easily realizable by installing the pole which sends a photography refusal signal.

[Brief Description of the Drawings]

[Drawing 1] It is the explanatory view showing the class and function of the personal digital assistant in the unjust photography prevention system of the 1st operation gestalt of this invention.

[Drawing 2] It is the block diagram showing the configuration of the personal digital assistant with a camera of the 1st operation gestalt of this invention.

[Drawing 3] It is the block diagram showing the configuration of the common personal digital assistant of the 1st operation gestalt of this invention.

[Drawing 4] It is the explanatory view showing the system outline of the 1st operation gestalt of this invention.

[Drawing 5] It is the flow chart Fig. showing actuation of the personal digital assistant with a camera of the 1st operation gestalt of this invention.

[Drawing 6] It is the flow chart Fig. showing actuation of the common personal digital assistant of the 1st operation gestalt of this invention.

[Drawing 7] It is the block diagram showing the system configuration of the 2nd operation gestalt of this invention.

[Drawing 8] It is the flow chart Fig. showing the personal digital assistant with a camera of the 2nd operation gestalt of this invention.

[Description of Notations]

201 Camera Mode Switch

202 Segnal Oscillator

203 Shutter Control Section

204 Shutter

205 Signal Receiver

206 Image Storage Control Section

207 Lens

208 Storage

209 Monitor

301 Setting Modification Section  
302 Setting Storage Section  
303 Signal Receiver  
304 Segnal Oscillator  
305 Signal Reception Report Section  
401 Photography Person  
402 Person Taken Photograph  
403 Signal Attainment Range  
404 Surrounding Personal Digital Assistant Owner  
405 Photographic Coverage  
501 Camera Mode-on Processing  
502 It is Signal Transmitting Processing During Photography.  
503 Processing Which Confirms Shutter  
504 Photography Refusal Signal Reception Judging Processing  
505 Shutter Depression Judging Processing  
506 Photography Processing  
507 Photography Termination Judging Processing  
509 Processing Which Makes Shutter Invalid  
510 Camera Mode-off Processing  
511 It is Signal Halt Processing During Photography.  
601 It is Signal Reception Judging Processing During Photography.  
602 Photography Refusal Judging Processing  
603 Photography Refusal Signal Transmitting Processing  
604 Notice-Judging-Process to Owner.  
605 Processing of Sound / Light / Vibration of Operation  
701 Photography Refusal Signal Dispatch Pole  
702 Photography Enabling-Signal Dispatch Pole  
703 Area Which Can be Photoed  
704 Photography Prohibition Area  
801 Camera Mode-on Processing  
802 It is Signal Transmitting Processing During Photography.  
803 Processing Which Confirms Shutter  
804 Photography Refusal Signal Reception Judging Processing  
805 Shutter Depression Judging Processing  
806 Photography Processing  
807 Photography Termination Judging Processing  
809 Photography Enabling-Signal Reception Judging Processing  
810 Processing Which Makes Shutter Invalid  
811 Camera Mode-off Processing  
812 It is Signal Halt Processing During Photography.

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TECHNICAL FIELD

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[Field of the Invention]

Especially this invention relates to the unjust photography prevention system of personal digital assistants with a photography function, such as a digital camera and a cellular phone with a camera, about an unjust photography prevention system.

[0002]

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PRIOR ART

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[Description of the Prior Art]

In recent years, the miniaturization of personal digital assistants, such as a digital camera and a cellular phone with a camera, progresses, and while becoming convenient that it is easy to carry, invasion of privacy, such as \*\*\*\*, is social concerns. Therefore, as a technique of preventing \*\*\*\* by such miniature camera, when taking a photograph with a camera, a beep sound is taken out from a camera, and the system which notifies that a photograph is taken by the man of the range which a beep sound reaches, the system which prevents \*\*\*\* by using a beep sound and a light together are developed.

[0003]

In addition, by JP,10-031265,A, the technique to which the beep sound which shows that an image pick-up is performed to the candidate for an image pick-up or that the image pick-up was performed is generated, and cautions are urged is indicated as this kind of a conventional technique.

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Furthermore, in JP,2001-313006,A, although it is not visible to people, the technique of protecting a photographic subject from photography with a \*\*\*\* camera is indicated by carrying out infrared light which carries out a light-receiving reaction at a camera above in a certain amount of strength, and irradiating it outside from a photographic subject. Furthermore, the technique which makes impossible photography of the range of the radius centering on an irradiating point of the light again to the photography from the direction-of-radiation (for example, head and thorax) front using the luminescence object which emits infrared radiation to the light source by drawing light to the photographic subject front with direct or an optical fiber is indicated.

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## EFFECT OF THE INVENTION

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### [Effect of the Invention]

This invention does so effectiveness which is indicated below. The 1st effectiveness can prevent unjust photography with personal digital assistants with a camera, such as a digital camera and a cellular phone with a camera, for the inside of shopping quarter or an electric car etc. also by the big location and big \*\*\*\*\* of the noise. The reason is because a photography refusal signal is sent and it enabled it to make photography stopped, when it sends by the feeble signal that a beep sound is not made but it is under photography to a perimeter and the signal is received.

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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention]

However, there are the following troubles in the system of these former. Since the camera which takes a photograph has generated the beep sound, the 1st trouble is not helpful, and by \*\*\*\*\*, I hear that the inside of shopping quarter or an electric car etc. is unknown in who took, and it has it in the location where the noise is big.

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When taking out warning only at once at the time of photography initiation, since it can be photoed by approaching a photographic subject after it makes a beep sound with somewhere else, I hear that the 3rd trouble cannot prevent \*\*\*\* and there is.

[0008]

When making a beep sound at the time of photography termination, since it separates from a photographic subject and can end camera photography, I hear that the 4th trouble cannot prevent \*\*\*\* and there is.

[0009]

When irradiating infrared light outside from a photographic subject and protecting a photographic subject from photography with a \*\*\*\* camera, if it is necessary to turn light in the direction of a \*\*\*\* camera and the direction of a camera is not known, I hear that the 5th trouble cannot prevent \*\*\*\* and there is.

[0010]

If the 6th trouble irradiates in all the directions centering on a photographic subject, it needs to be clothed in the tool which irradiates light at the whole body on the body, and I hear that it is troublesome on everyday life, and there is.

[0011]

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[0012]

Moreover, other purposes of this invention are offering the unjust photography prevention system which can photo a photographic subject, even when it prevents that the beep sound for \*\*\*\* prevention is recorded during photography when photoing the animation containing voice and it can be photoed only in the quiet condition.

[0013]

Moreover, other purposes of this invention are offering the unjust photography prevention system which prevented unjust photography even when the direction of a camera was not found,

and was excellent in portability.  
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## MEANS

## [Means for Solving the Problem]

In the unjust photography prevention system by which the unjust photography prevention system of this invention consists of a photography side personal digital assistant which has a photography function, and a photographic subject side personal digital assistant said photography side personal digital assistant It carries out having the signal dispatch section which sends out a signal during the photography which shows that it is under photography at the time of photography, and having the photography refusal section which sends out the photography refusal signal which will make an invalid the photography function of said photography side personal digital assistant if said photographic subject side personal digital assistant receives a signal during said photography as the description.

[0015]

## [Embodiment of the Invention]

Next, the 1st operation gestalt of the unjust photography prevention system of this invention is explained to a detail with reference to a drawing. Drawing 1 is the explanatory view showing the class and function of the personal digital assistant in the unjust photography prevention system of the 1st operation gestalt of this invention. The unjust photography prevention system of this operation gestalt consists of a personal digital assistant with a camera by the side of photography, and a personal digital assistant for general by the side of a photographic subject (with no camera existence relation), as shown in drawing 1.

[0016]

The personal digital assistant with a camera by the side of photography is equipped with the function which sends a signal during photography at the time of camera photography. A signal is a feeble signal which shows that it is in the condition which can photo a personal digital assistant with a camera during photography.

[0017]

On the other hand, the common personal digital assistant by the side of a photographic subject can set up the following three actuation as actuation at the time of receiving a signal during photography from the personal digital assistant with a camera by the side of photography.

- 1) If a signal is received during photography, a photography refusal signal will be sent.
- 2) If a signal is received during photography, you will be told about by the sound / light / vibration / display.
- 3) A signal is disregarded during photography.

Therefore, the unjust photography prevention system of this operation gestalt may be photoed any time, when a signal is set as disregard during photography.

[0018]

Drawing 2 is the block diagram showing the configuration of the personal digital assistant with a camera in the unjust photography prevention system of the 1st operation gestalt. Reference of drawing 2 constitutes the personal digital assistant with a camera from the camera mode switch 201, a signal oscillator 202, the shutter control section 203, a shutter 204, the signal receiver 205, the image storage control section 206, a lens 207, storage 208, and a monitor 209.

[0019]

The camera mode switch 201 is a switch turned ON first, when a user takes a photograph with a camera. If this camera mode switch 201 is turned ON, a signal will be sent during photography from a signal oscillator 202, and a shutter 204 will become effective by the shutter control section 203 at coincidence.

[0020]

A signal oscillator 202 will send a signal during photography to the exterior of a personal digital assistant, if the camera mode switch 201 is turned on. The shutter control section 203 will confirm a shutter 204, if the camera mode switch 201 is turned on. Moreover, when the signal receiver 205 receives a photography refusal signal, it changes to a condition with an invalid shutter 204 by the shutter control section 203, and photography becomes impossible.

[0021]

A shutter 204 can be photoed by carrying out the depression of the shutter 204, while the valid signal from the shutter control section 203 turns on. The signal receiver 205 is notified to the shutter control section 203, when a photography refusal signal is detected from a perimeter. Thereby, it changes to a condition with an invalid shutter 204, and photography becomes impossible.

[0022]

The image storage control section 206 transmits the image information which obtained the shutter 204 from the lens 207 by carrying out a depression to storage 208. A lens 207 is a camera lens and transmits the image information of a photographic subject to said image storage control section 206. Storage 208 carries out the reception storage of the image information transmitted from the lens 207 when the shutter 204 was pushed from the image storage control section 206. A monitor 209 displays the image information from a lens 207. Moreover, the image information memorized by storage 208 is also displayed.

[0023]

Drawing 3 is the block diagram showing the configuration of the common personal digital assistant of the 1st operation gestalt. Reference of drawing 3 constitutes the common personal digital assistant from the setting modification section 301, the setting storage section 302, a signal receiver 303, a signal oscillator 304, and the signal reception report section 305.

[0024]

The setting modification section 301 is a means to set up beforehand actuation ( drawing 1 publication) of the common personal digital assistant when detecting a signal during photography. The setting storage section 302 memorizes the set point inputted in the setting modification section 301, and when a signal is detected during photography with the signal receiver 303, it directs the actuation according to a setup. For example, actuation by the photography refusal signal dispatch for photography refusal, a sound / light / vibration / display for the notice of photography, etc. is directed in a signal oscillator 304 and the signal reception report section 305.

[0025]

The signal receiver 303 is notified to the setting storage section 302, when a signal is received during the photography from a surrounding personal digital assistant. A signal oscillator 304 sends a photography refusal signal, when there is a photography refusal signal dispatch demand for photography refusal from the setting storage section 302. The signal reception report section 305 carries out actuation, when there are operational requests, such as a sound / light / vibration / display for the notice of photography, from the setting storage section 302.

[0026]

Next, actuation of the 1st operation gestalt is explained to a detail with reference to a drawing. Drawing 4 is the explanatory view showing the system outline of this operation gestalt. In drawing 4, when the photography person 401 photos the person 402 taken a photograph, a signal is transmitted during photography so that a ball may be drawn focusing on the photography person 401. A signal is received by breadth, the person 402 taken a photograph, and the surrounding personal digital assistant owner 404 to the signal attainment range 403 during photography. Each personal digital assistant which received the signal during photography performs actuation ( drawing 1 publication) beforehand set up by each user. In a setup whose

setting storage section 302 ( drawing 3 publication) transmits a photography refusal signal, a photography person's camera photography can be made impossible and, in a setup which tells further that a photography person is in near, photographic coverage 405 can be escaped by telling an owner by light / sound / vibration / display.

[0027]

Drawing 5 is the flow chart Fig. showing actuation of the personal digital assistant with a camera which a photography person owns. First, a photography person turns ON the camera mode switch 201 at the time of camera photography (step 501). A signal is transmitted to a perimeter during photography from a signal oscillator 202 by ON of the camera mode switch 201 (step 502), and a shutter 204 becomes effective (step 503). Then, it supervises whether the shutter 204 was pushed, or, when it makes a judgment (step 504) and the photography refusal signal is not received, and when [ to which the personal digital assistant with a camera received the photography refusal signal ] (step 505).

[0028]

When judging whether photography is ended when the shutter 204 is not pushed (step 507) and not ending photography, processing of return, step 505, and step 507 is repeated to step 504.

[0029]

When a shutter 204 is pushed at this time, a photograph is taken (step 506) and after photography repeats step 504, step 505, and step 507. When a photography refusal signal is received by photography refusal signal reception decision (step 504), a shutter 204 is made into an invalid (step 509), the camera mode switch 201 is turned OFF (step 510), and transmission of a signal is automatically stopped during photography (step 511).

[0030]

Moreover, by photography termination decision (step 507), also when it becomes photography termination, a shutter 204 is made into an invalid (step 509), the camera mode switch 201 is turned OFF (step 510), and transmission of a signal is automatically stopped during photography (step 511).

[0031]

Drawing 6 is the flow chart Fig. showing actuation of a common personal digital assistant with a photography control function. The common personal digital assistant in a standby condition checks the existence of signal reception during photography (step 601). If a signal is received during photography, it will judge whether photography is refused with the set point of the setting storage section 302 (step 602),

When being set up at this time so that photography may be refused, a photography refusal signal is transmitted (step 603). Next, it judges whether the set point of the setting storage section 302 informs an owner (step 604), and when being set up at this time so that an owner may be notified, light / sound / vibration / display informs an owner (step 605).

[0032]

Drawing 7 is the explanatory view showing the system configuration of the gestalt of operation of the 2nd of this invention. Although the hitcher on etc. is defending those who are going to photo the display object of the ban on photography when there are a display object which can be photoed, and a display object of the ban on photography in an exhibition hall etc., as shown in drawing 7 , the pole 701 which sends a photography refusal signal, and the pole 702 sent in a photography enabling signal are stood, and the area 703 which can be photoed, and the photography prohibition area 704 are distinguished. A photography enabling signal is a signal which has priority highly from a photography refusal signal, and when both a photography enabling signal and a photography refusal signal are received, it makes photography possible here.

[0033]

Drawing 8 is the flow chart Fig. showing actuation of the personal digital assistant with a camera in the gestalt of the 2nd operation. First, a photography person turns ON the camera mode switch 201 at the time of camera photography (step 801). A signal is transmitted to a perimeter during photography from a signal oscillator 202 by ON of the camera mode switch 201 (step 802), and a shutter 204 becomes effective (step 803).

[0034]

Then, it supervises whether the shutter 204 was pushed, or, when it makes a judgment (step 804) and the photography refusal signal is not received, and when [ to which the personal digital assistant with a camera received the photography refusal signal ] (step 805). When whether photography is ended when the shutter 204 is not pushed judges (step 807) and it does not end photography, step 804, step 805, and step 807 are repeated.

[0035]

When a shutter 204 is pushed at this time, a photograph is taken (step 806) and after photography repeats step 804, step 805, and step 807. If it judged whether the photography enabling signal would be received (step 809) and the photography enabling signal is received by photography refusal signal reception decision (step 804) when a photography refusal signal is received, it will move to whether the shutter 204 was pushed and the step (step 805) to supervise.

[0036]

By decision (step 809) whether the photography enabling signal is received, when the photography enabling signal is not received, a shutter 204 is made into an invalid (step 810), the camera mode switch 201 is turned OFF (step 811), and transmission of a signal is automatically stopped during photography (step 812).

[0037]

Moreover, by photography termination decision (step 807), also when it becomes photography termination, a shutter 204 is made into an invalid (step 810), the camera mode switch 201 is turned OFF (step 811), and transmission of a signal is automatically stopped during photography (step 812).

[0038]

Moreover, since a shutter 204 will become an invalid (step 810) and photography mode will be turned off if it comes out from photography authorization area even when the animation is being photoed moving (step 811), photography is stopped. It becomes possible to prevent unjust photography by the above, without employing a help.

[0039]

The system by this invention besides the above-mentioned operation gestalt is also utilizable as follows. For example, he can feel easy by installing the personal digital assistant which has a photography control function beforehand at the inside of an electric car, a department store, etc., and can use an electric car, and some shopping can be done at a department store. Moreover, \*\*\*\* of goods can also be prevented at a department store. Moreover, with this operation gestalt, since it can notify by the sound / light / vibration / display if a signal is received during photography, while being able to discover easily those who are doing the photography action, work of the suppression effectiveness is also expectable by notifying in advance the thing which have a photography control function and which is being done for personal digital assistant installation.

[0040]

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[Translation done.]

## \* NOTICES \*

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- 3.In the drawings, any words are not translated.

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1] It is the explanatory view showing the class and function of the personal digital assistant in the unjust photography prevention system of the 1st operation gestalt of this invention.

[Drawing 2] It is the block diagram showing the configuration of the personal digital assistant with a camera of the 1st operation gestalt of this invention.

[Drawing 3] It is the block diagram showing the configuration of the common personal digital assistant of the 1st operation gestalt of this invention.

[Drawing 4] It is the explanatory view showing the system outline of the 1st operation gestalt of this invention.

[Drawing 5] It is the flow chart Fig. showing actuation of the personal digital assistant with a camera of the 1st operation gestalt of this invention.

[Drawing 6] It is the flow chart Fig. showing actuation of the common personal digital assistant of the 1st operation gestalt of this invention.

[Drawing 7] It is the block diagram showing the system configuration of the 2nd operation gestalt of this invention.

[Drawing 8] It is the flow chart Fig. showing the personal digital assistant with a camera of the 2nd operation gestalt of this invention.

### [Description of Notations]

201 Camera Mode Switch

202 Segnal Oscillator

203 Shutter Control Section

204 Shutter

205 Signal Receiver

206 Image Storage Control Section

207 Lens

208 Storage

209 Monitor

301 Setting Modification Section

302 Setting Storage Section

303 Signal Receiver

304 Segnal Oscillator

305 Signal Reception Report Section

401 Photography Person

402 Person Taken Photograph

403 Signal Attainment Range

404 Surrounding Personal Digital Assistant Owner

405 Photographic Coverage

501 Camera Mode-on Processing

502 It is Signal Transmitting Processing During Photography.

503 Processing Which Confirms Shutter

504 Photography Refusal Signal Reception Judging Processing  
505 Shutter Depression Judging Processing  
506 Photography Processing  
507 Photography Termination Judging Processing  
509 Processing Which Makes Shutter Invalid  
510 Camera Mode-off Processing  
511 It is Signal Halt Processing During Photography.  
601 It is Signal Reception Judging Processing During Photography.  
602 Photography Refusal Judging Processing  
603 Photography Refusal Signal Transmitting Processing  
604 Notice-Judging-Process to Owner.  
605 Processing of Sound / Light / Vibration of Operation  
701 Photography Refusal Signal Dispatch Pole  
702 Photography Enabling-Signal Dispatch Pole  
703 Area Which Can be Photoed  
704 Photography Prohibition Area  
801 Camera Mode-on Processing  
802 It is Signal Transmitting Processing During Photography.  
803 Processing Which Confirms Shutter  
804 Photography Refusal Signal Reception Judging Processing  
805 Shutter Depression Judging Processing  
806 Photography Processing  
807 Photography Termination Judging Processing  
809 Photography Enabling-Signal Reception Judging Processing  
810 Processing Which Makes Shutter Invalid  
811 Camera Mode-off Processing  
812 It is Signal Halt Processing During Photography.

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[Translation done.]

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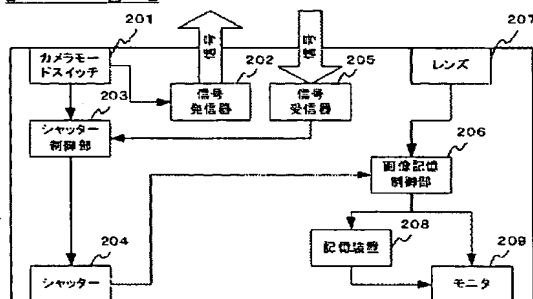
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- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

## DRAWINGS

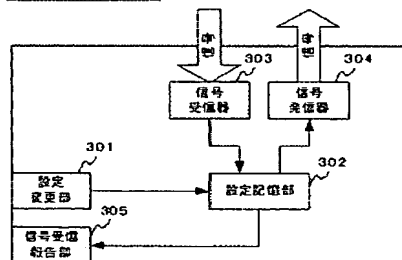
[Drawing 1]

| 端末種類                  | 機能  |
|-----------------------|---|
| カメラ付き<br>携帯端末         | ・カメラ撮影時に撮影中信号を発信  |
| 一部携帯端末<br>(カメラ有無関係無し) | ・撮影中信号を受けたら撮影拒否信号を送信<br>・撮影中信号を受けたら音や光で本人に知らせる<br>・撮影中信号を監視 |

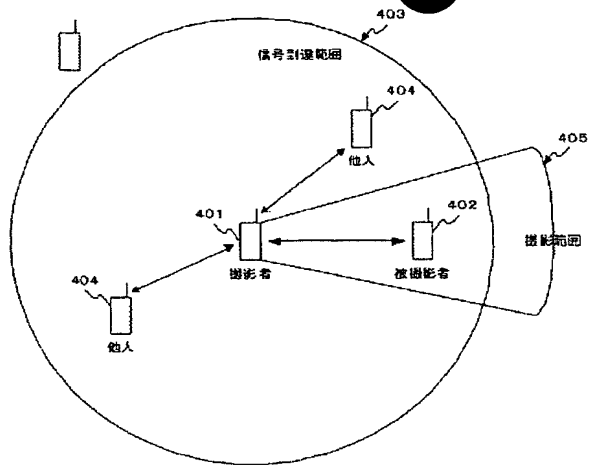
[Drawing 2]



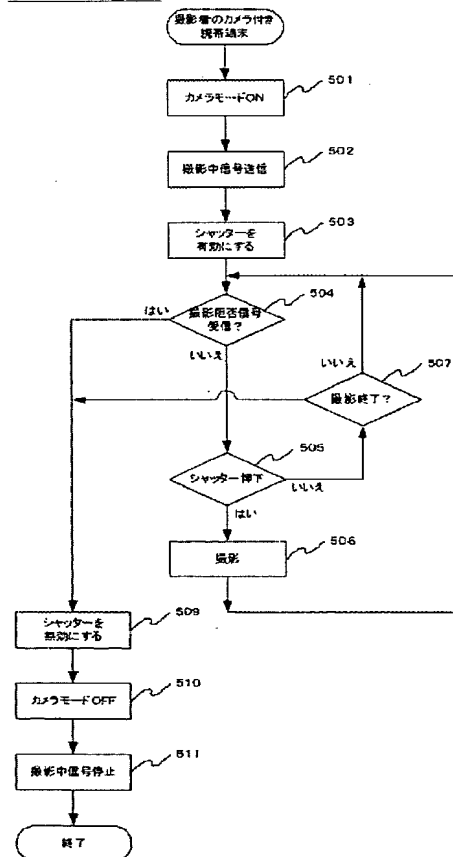
[Drawing 3]



[Drawing 4]

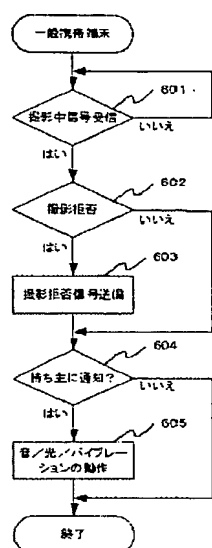


[Drawing 5]

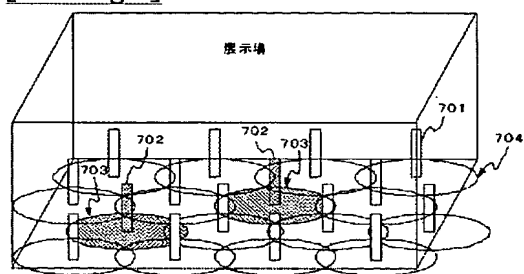


[Drawing 6]

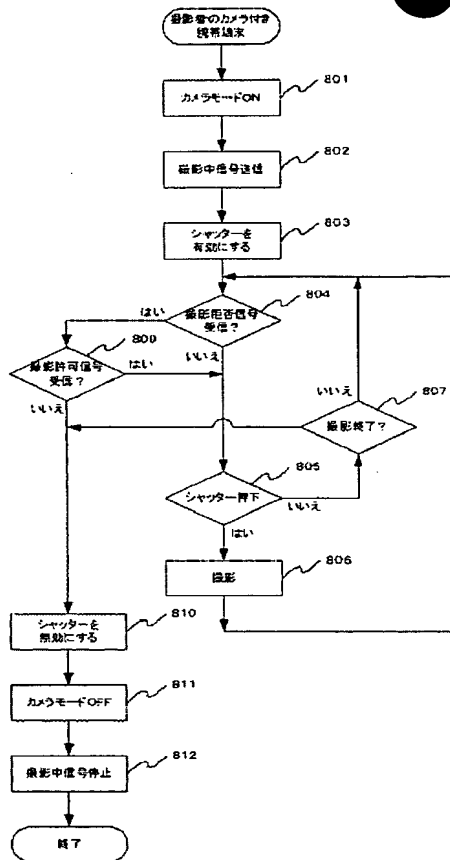




[Drawing 7]



[Drawing 8]



[Translation done.]

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CA00

(54) 【発明の名称】 不正撮影防止システム

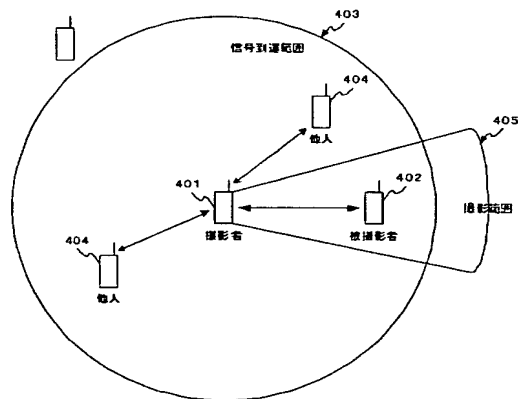
(57) 【要約】

【課題】 デジタルカメラやカメラ付き携帯電話などのカメラ付き携帯端末での盗撮を繁華街や電車など騒音の大きな場所や人混みでも防ぐことが可能な不正撮影防止システムを提供することである。

である。

【解決手段】 不正撮影防止システムは、撮影を行う際に周囲の人、または被撮影者に撮影中であることを知らせる手段を持つカメラ付き端末と、撮影中であることを検知して撮影者のカメラ付き端末を制御する手段を持つ端末とから構成される。

【選択図】 図4



**【特許請求の範囲】****【請求項 1】**

撮影機能を有する撮影側携帯端末と被写体側携帯端末とからなる不正撮影防止システムにおいて、前記撮影側携帯端末は、撮影時に撮影中であることを示す撮影中信号を送出する信号発信部を有し、前記被写体側携帯端末は、前記撮影中信号を受信すると前記撮影側携帯端末の撮影機能を無効にする撮影拒否信号を送出する撮影拒否部を有することを特徴とする不正撮影防止システム。

**【請求項 2】**

撮影機能を有する撮影側携帯端末と被写体側携帯端末とからなる不正撮影防止システムにおいて、

前記撮影側携帯端末は、撮影モードを ON / OFF するスイッチ部と、前記スイッチ部の ON 動作により撮影中であることを示す撮影中信号を送出する撮影側信号発信部と、前記被写体側携帯端末から送出される信号を受信する撮影側信号受信部と、前記スイッチ部 ON 時に押下すると撮影を実行するシャッター部とを有し、

前記被写体側携帯端末は、前記撮影中信号を受信する被写体側信号受信部と、前記撮影中信号受信時における前記撮影側携帯端末の撮影動作を許可するか否かを設定する設定変更部と、前記設定変更部の設定値を記憶する設定記憶部と、前記設定記憶部の設定値を外部に送出する被写体側送信部とを有することを特徴とする不正撮影防止システム。

**【請求項 3】**

前記被写体側携帯端末は、前記撮影中信号を受信したことを被写体に通知する報告部を有することを特徴とする請求項 2 記載の不正撮影防止システム。

**【請求項 4】**

前記被写体側携帯端末に変わって、被写体近傍に設置され、撮影を許可する撮影許可信号または撮影を拒否する撮影拒否信号を送出して撮影可能エリアまたは撮影禁止エリアを形成するポール部を備えることを特徴とする請求項 2 記載の不正撮影防止システム。

**【請求項 5】**

前記撮影側携帯端末が前記撮影許可信号及び前記撮影拒否信号の両方を受信した場合は前記撮影許可信号を優先することを特徴とする請求項 4 記載の不正撮影防止システム。

**【発明の詳細な説明】****【0001】****【発明の属する技術分野】**

本発明は、不正撮影防止システムに関し、特にデジタルカメラやカメラ付き携帯電話等の撮影機能付携帯端末の不正撮影防止システムに関する。

**【0002】****【従来技術】**

近年、デジタルカメラやカメラ付き携帯電話などの携帯端末の小型化が進み、持ち運びやすく便利になる一方で、盗撮などのプライバシー侵害が社会的問題になっている。そのため、このような小型カメラによる盗撮を防止する技術として、例えば、カメラで撮影を行うときにカメラから警告音を出し、警告音が届く範囲の人に撮影されていることを通知するシステムや、警告音とライトを併用することにより盗撮を防止するシステム等が開発されている。

**【0003】**

この他、この種の従来技術として、例えば、特開平 10-031265 号公報では、撮像対象に対して撮像が行われること、もしくは撮像が行われたことを示す警告音を発生して注意を促す技術が開示されている。

**【0004】**

更に、特開 2001-313006 号公報では、人には見えないがカメラには受光反応する赤外光を、ある程度の強さ以上に被写体から外部に照射することにより、盗撮カメラによる撮影から被写体を守る技術が開示されている。更にまた、光源に赤外線を発する発光物を用い、その光を直接、もしくは光ファイバーにて被写体前方まで光を導くことによ

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り、（例えば頭部や胸部）照射方向前方からの撮影に対し照射点を中心としてある半径の範囲を撮影不可能にする技術が開示されている。

【0005】

【発明が解決しようとする課題】

しかしながら、これら従来のシステムには次のような問題点がある。第1の問題点は、撮影を行うカメラが警告音を発生しているため、繁華街や電車内など騒音の大きな場所では役に立たず、人混みでは誰が取ったのか不明であるということである。

【0006】

第2の問題点は、撮影中に警告音を出し続ける場合、音声を含む動画を撮影すると警告音もいっしょに録音されてしまい、静かな状態でしか撮影できない鳥などの被写体の撮影は難しいということである。

【0007】

第3の問題点は、撮影開始時に一度だけ警告を出す場合は、警告音を別の場所を出してから被写体に近づき撮影を行うことができるため盗撮を防止できないということである。

【0008】

第4の問題点は、警告音を撮影終了時に出す場合は、被写体から離れてカメラ撮影を終了できるため盗撮を防止できないということである。

【0009】

第5の問題点は、赤外光を被写体から外部に照射して盗撮カメラによる撮影から被写体を守る場合、盗撮カメラの方向に光を向ける必要があり、カメラの方向が分からないと盗撮を防止できないということである。

【0010】

第6の問題点は、被写体を中心に全方向に照射するとなると全身に光を照射する工具を身に纏う必要があり、日常生活上煩わしいということである。

【0011】

本発明は上記問題に鑑みてなされたものであって、本発明は、デジタルカメラやカメラ付き携帯電話等の撮影機能付き携帯端末による盗撮を繁華街や電車などの騒音の大きな場所や人混みでも防ぐことが可能な不正撮影防止システムを提供することを目的とする。

【0012】

また本発明の他の目的は、音声を含む動画を撮影する場合、撮影中に盗撮防止用の警告音が録音されることを防止し、静かな状態でしか撮影できない場合でも被写体の撮影が可能な不正撮影防止システムを提供することである。

【0013】

また本発明の他の目的は、カメラの方向が分からない場合でも不正撮影を防ぎ、携帯性に優れた不正撮影防止システムを提供することである。

【0014】

【課題を解決するための手段】

本発明の不正撮影防止システムは、撮影機能を有する撮影側携帯端末と被写体側携帯端末とからなる不正撮影防止システムにおいて、前記撮影側携帯端末は、撮影時に撮影中であることを示す撮影中信号を送出する信号発信部を有し、前記被写体側携帯端末は、前記撮影中信号を受信すると前記撮影側携帯端末の撮影機能を無効にする撮影拒否信号を送出する撮影拒否部を有することを特徴とする。

【0015】

【発明の実施の形態】

次に本発明の不正撮影防止システムの第1の実施形態について図面を参照して詳細に説明する。図1は、本発明の第1の実施形態の不正撮影防止システムにおける携帯端末の種類とその機能を示す説明図である。本実施形態の不正撮影防止システムは、図1に示すように、撮影側のカメラ付き携帯端末と、被写体側の一般用携帯端末（カメラ有無関係無し）とで構成される。

【0016】

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撮影側のカメラ付き携帯端末は、カメラ撮影時に撮影中信号を発信する機能を備えている。撮影中信号とは、カメラ付き携帯端末が撮影可能な状態にあることを示す微弱信号である。

#### 【0017】

一方、被写体側の一般携帯端末は、撮影側のカメラ付き携帯端末から撮影中信号を受信した場合の動作として、次の3つの動作を設定することができる。

- 1) 撮影中信号を受けたら撮影拒否信号を発信
- 2) 撮影中信号を受けたら音／光／バイブレーション／表示等で知らせる
- 3) 撮影中信号を無視

したがって、本実施形態の不正撮影防止システムは、撮影中信号を無視に設定すると、いつ撮影されてもよいことになる。

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#### 【0018】

図2は、第1の実施形態の不正撮影防止システムにおけるカメラ付き携帯端末の構成を示すブロック図である。図2を参照するとカメラ付き携帯端末は、カメラモードスイッチ201と、信号発信器202と、シャッター制御部203と、シャッター204と、信号受信器205と、画像記憶制御部206と、レンズ207と、記憶装置208と、モニタ209とから構成される。

#### 【0019】

カメラモードスイッチ201は、ユーザがカメラで撮影する場合、まず始めにONにするスイッチである。このカメラモードスイッチ201をONにすると、信号発信器202から撮影中信号が発信され、同時にシャッター制御部203によりシャッター204が有効になる。

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#### 【0020】

信号発信器202は、カメラモードスイッチ201がONになると携帯端末の外部に対して撮影中信号を発信する。シャッター制御部203は、カメラモードスイッチ201がONになるとシャッター204を有効にする。また、撮影拒否信号を信号受信器205により受信した場合は、シャッター制御部203によりシャッター204が無効な状態へ切り替わり、撮影は不可能となる。

#### 【0021】

シャッター204は、シャッター制御部203からの有効信号がONしている間は、シャッター204を押下することで撮影可能である。信号受信器205は、周囲から撮影拒否信号を検知した場合、シャッター制御部203へ通知する。これによりシャッター204が無効な状態へ切り替わり、撮影は不可能となる。

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#### 【0022】

画像記憶制御部206は、シャッター204を押下することでレンズ207から得た画像情報を記憶装置208へ伝達する。レンズ207は、カメラレンズであり被写体の画像情報を前記画像記憶制御部206に伝達する。記憶装置208は、シャッター204を押下した時点でレンズ207から伝達された画像情報を、画像記憶制御部206から受け取り記憶する。モニタ209は、レンズ207からの画像情報を表示する。また、記憶装置208に記憶されている画像情報も表示する。

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#### 【0023】

図3は、第1の実施形態の一般携帯端末の構成を示すブロック図である。図3を参照すると、一般携帯端末は、設定変更部301と、設定記憶部302と、信号受信機303と、信号発信器304と、信号受信報告部305とから構成されている。

#### 【0024】

設定変更部301は、撮影中信号を検知したときの一般携帯端末の動作（図1記載）をあらかじめ設定する手段である。設定記憶部302は、設定変更部301で入力した設定値を記憶し、信号受信器303で撮影中信号を検知したときに設定に応じた動作を指示する。例えば、撮影拒否のための撮影拒否信号発信や撮影通知のための音／光／バイブレーション／表示等による動作を信号発信器304および信号受信報告部305に指示する。

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## 【0025】

信号受信器303は、周辺の携帯端末からの撮影中信号を受信した場合、設定記憶部302へ通知する。信号発信器304は、設定記憶部302から撮影拒否のための撮影拒否信号発信要求があった場合に撮影拒否信号を発信する。信号受信報告部305は、設定記憶部302から撮影通知のための音／光／バイブレーション／表示等の動作要求があった場合に対応する動作をする。

## 【0026】

次に、第1の実施形態の動作について図面を参照して詳細に説明する。図4は、本実施形態のシステム概要を示す説明図である。図4において、撮影者401が被撮影者402を撮影する場合、撮影者401を中心として球を描くように撮影中信号が送信される。撮影中信号は信号到達範囲403まで広がり、被撮影者402や周囲の携帯端末所有者404に受信される。撮影中信号を受信した各携帯端末は、それぞれのユーザによってあらかじめ設定された動作（図1記載）を行う。設定記憶部302（図3記載）が撮影拒否信号を送信する設定の場合、撮影者のカメラ撮影を不可能にすることができ、さらに、近くに撮影者が居ることを知らせる設定の場合、光／音／バイブレーション／表示等で所有者に知らせることで撮影範囲405から逃れることができる。

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## 【0027】

図5は、撮影者の所有するカメラ付き携帯端末の動作を示すフローチャート図である。まず、撮影者がカメラ撮影時に、カメラモードスイッチ201をONにする（ステップ501）。カメラモードスイッチ201のONにより、信号発信器202から撮影中信号が周囲に送信され（ステップ502）、シャッター204が有効になる（ステップ503）。その後、カメラ付き携帯端末が撮影拒否信号を受信したか判断し（ステップ504）、撮影拒否信号を受信していない場合、シャッター204が押下されたかを監視する（ステップ505）。

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## 【0028】

シャッター204が押下されていない場合は、撮影を終了するか否かを判断し（ステップ507）、撮影を終了しない場合は、ステップ504に戻り、ステップ505、ステップ507の処理を繰り返す。

## 【0029】

このとき、シャッター204が押下された場合、撮影を行い（ステップ506）、撮影後は、ステップ504、ステップ505、ステップ507を繰り返す。撮影拒否信号受信判断（ステップ504）で撮影拒否信号を受信した場合はシャッター204を無効にし（ステップ509）、カメラモードスイッチ201をOFFにして（ステップ510）、撮影中信号の送信を自動的に止める（ステップ511）。

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## 【0030】

また、撮影終了判断（ステップ507）で、撮影終了となった場合も、シャッター204を無効にし（ステップ509）、カメラモードスイッチ201をOFFにして（ステップ510）、撮影中信号の送信を自動的に止める（ステップ511）。

## 【0031】

図6は、撮影制御機能を持つ一般携帯端末の動作を示すフローチャート図である。待機状態にある一般の携帯端末は、撮影中信号受信の有無をチェックする（ステップ601）。撮影中信号を受信すると、設定記憶部302の設定値により撮影を拒否するか否かの判断を行い（ステップ602）、

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このとき、撮影を拒否するよう設定されていた場合は、撮影拒否信号を送信する（ステップ603）。次に、設定記憶部302の設定値により所有者に通知するかどうかの判断を行い（ステップ604）、このとき、所有者に通知するよう設定されている場合は、光／音／バイブレーション／表示等により所有者に通知する（ステップ605）。

## 【0032】

図7は、本発明の第2の実施の形態のシステム構成を示す説明図である。展示場などで、撮影可能な展示物と撮影禁止の展示物がある場合、撮影禁止の展示物を撮影しようとする

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人を監視員などが警備しているが、図 7 に示すように撮影拒否信号を発信するポール 7 0 1 と、撮影許可信号を発信するポール 7 0 2 を立て、撮影可能エリア 7 0 3 と撮影禁止エリア 7 0 4 を区別する。ここで撮影許可信号とは、撮影拒否信号より優先順位を高く持つ信号で、撮影許可信号と撮影拒否信号を両方受信した場合は撮影可能とする。

#### 【 0 0 3 3 】

図 8 は、第 2 の実施の形態におけるカメラ付き携帯端末の動作を示すフローチャート図である。まず、撮影者がカメラ撮影時に、カメラモードスイッチ 2 0 1 を ON にする（ステップ 8 0 1）。カメラモードスイッチ 2 0 1 の ON により、信号発信器 2 0 2 から撮影中信号が周囲に送信され（ステップ 8 0 2）、シャッター 2 0 4 が有効になる（ステップ 8 0 3）。

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#### 【 0 0 3 4 】

その後、カメラ付き携帯端末が撮影拒否信号を受信したか判断し（ステップ 8 0 4）、撮影拒否信号を受信していない場合、シャッター 2 0 4 が押下されたかを監視する（ステップ 8 0 5）。シャッター 2 0 4 が押下されていない場合は、撮影を終了するか否かの判断し（ステップ 8 0 7）、撮影を終了しない場合は、ステップ 8 0 4、ステップ 8 0 5、ステップ 8 0 7 を繰り返す。

#### 【 0 0 3 5 】

このとき、シャッター 2 0 4 が押下された場合、撮影を行い（ステップ 8 0 6）、撮影後は、ステップ 8 0 4、ステップ 8 0 5、ステップ 8 0 7 を繰り返す。撮影拒否信号受信判断（ステップ 8 0 4）で、撮影拒否信号を受信した場合、撮影許可信号を受信しているかどうかの判断をし（ステップ 8 0 9）、撮影許可信号を受信していたらシャッター 2 0 4 が押下されたか（ステップ 8 0 5）監視するステップへ移る。

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#### 【 0 0 3 6 】

撮影許可信号を受信しているかどうかの判断（ステップ 8 0 9）で、撮影許可信号を受信していない場合、シャッター 2 0 4 を無効にし（ステップ 8 1 0）、カメラモードスイッチ 2 0 1 を OFF にして（ステップ 8 1 1）、撮影中信号の送信を自動的に止める（ステップ 8 1 2）。

#### 【 0 0 3 7 】

また、撮影終了判断（ステップ 8 0 7）で、撮影終了となった場合も、シャッター 2 0 4 を無効にし（ステップ 8 1 0）、カメラモードスイッチ 2 0 1 を OFF にして（ステップ 8 1 1）、撮影中信号の送信を自動的に止める（ステップ 8 1 2）。

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#### 【 0 0 3 8 】

また、移動しながら動画を撮影している場合でも撮影許可エリアから出るとシャッター 2 0 4 が無効になり（ステップ 8 1 0）、撮影モードが OFF になる（ステップ 8 1 1）ため、撮影が中止される。以上により、人手を使わずに不正な撮影を防ぐことが可能となる。

#### 【 0 0 3 9 】

上記の実施形態のほか、本発明によるシステムは次のように活用することもできる。例えば、電車内やデパートなどで、あらかじめ撮影制御機能を有する携帯端末を設置することで安心して電車を利用でき、デパートで買い物をするができる。また、デパートなどでは商品の盗撮も防ぐことができる。また本実施形態では、撮影中信号を受信すると音／光／バイブレーション／表示等で通知できるため撮影行為をしている人を容易に発見できるとともに、撮影制御機能を有する携帯端末設置していることを事前に通知することにより抑止効果の働きも期待できる。

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#### 【 0 0 4 0 】

##### 【発明の効果】

本発明は以下に記載するような効果を奏する。第 1 の効果は、デジタルカメラやカメラ付き携帯電話などのカメラ付き携帯端末での不正撮影を繁華街や電車内など騒音の大きな場所や人混みでも防ぐことができる。その理由は、警告音を出すのではなく撮影中であることを微弱信号で周囲に発信し、その信号を受信した場合、撮影拒否信号を発信して撮影を

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止めさせることができるようにしたためである。

【0041】

第2の効果は、静かな状態でしか撮影できない鳥などの被写体の撮影も可能とすることである。その理由は、警告音を出すのではなく撮影中であることを微弱信号を発信し周囲に知らせるようにしたためである。

【0042】

第3の効果は、カメラの方向が分からない場合でも不正撮影を防ぐことができる。その理由は、撮影拒否するために指向性のある赤外光等ではなく信号を発信するため、周囲にくまなく行き渡るためである。

【0043】

第4の効果は、展示場などでは、不正撮影を防止するための監視員を削減できる。その理由は、展示会などの撮影禁止場所では撮影行為を防犯カメラや監視員などによって防がなければならないが、撮影拒否信号を発信するポールを設置することで容易に実現できるためである。

【図面の簡単な説明】

【図1】本発明の第1の実施形態の不正撮影防止システムにおける携帯端末の種類とその機能を示す説明図である。

【図2】本発明の第1の実施形態のカメラ付き携帯端末の構成を示すブロック図である。

【図3】本発明の第1の実施形態の一般携帯端末の構成を示すブロック図である。

【図4】本発明の第1の実施形態のシステム概要を示す説明図である。

【図5】本発明の第1の実施形態のカメラ付き携帯端末の動作を示すフローチャート図である。

【図6】本発明の第1の実施形態の一般携帯端末の動作を示すフローチャート図である。

【図7】本発明の第2の実施形態のシステム構成を示すブロック図である。

【図8】本発明の第2の実施形態のカメラ付き携帯端末を示すフローチャート図である。

【符号の説明】

|     |               |
|-----|---------------|
| 201 | カメラモードスイッチ    |
| 202 | 信号発信器         |
| 203 | シャッター制御部      |
| 204 | シャッター         |
| 205 | 信号受信器         |
| 206 | 画像記憶制御部       |
| 207 | レンズ           |
| 208 | 記憶装置          |
| 209 | モニタ           |
| 301 | 設定変更部         |
| 302 | 設定記憶部         |
| 303 | 信号受信器         |
| 304 | 信号発信器         |
| 305 | 信号受信報告部       |
| 401 | 撮影者           |
| 402 | 被撮影者          |
| 403 | 信号到達範囲        |
| 404 | 周囲の携帯端末所有者    |
| 405 | 撮影範囲          |
| 501 | カメラモードON処理    |
| 502 | 撮影中信号送信処理     |
| 503 | シャッターを有効にする処理 |
| 504 | 撮影拒否信号受信判定処理  |
| 505 | シャッター押下判定処理   |

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- 5 0 6 撮影処理  
 5 0 7 撮影終了判定処理  
 5 0 9 シャッターを無効にする処理  
 5 1 0 カメラモードOFF処理  
 5 1 1 撮影中信号停止処理  
 6 0 1 撮影中信号受信判定処理  
 6 0 2 撮影拒否判定処理  
 6 0 3 撮影拒否信号送信処理  
 6 0 4 持ち主に通知判定処理  
 6 0 5 音／光／バイブレーションの動作処理  
 7 0 1 撮影拒否信号発信ポール  
 7 0 2 撮影許可信号発信ポール  
 7 0 3 撮影可能エリア  
 7 0 4 撮影禁止エリア  
 8 0 1 カメラモードON処理  
 8 0 2 撮影中信号送信処理  
 8 0 3 シャッターを有効にする処理  
 8 0 4 撮影拒否信号受信判定処理  
 8 0 5 シャッター押下判定処理  
 8 0 6 撮影処理  
 8 0 7 撮影終了判定処理  
 8 0 9 撮影許可信号受信判定処理  
 8 1 0 シャッターを無効にする処理  
 8 1 1 カメラモードOFF処理  
 8 1 2 撮影中信号停止処理

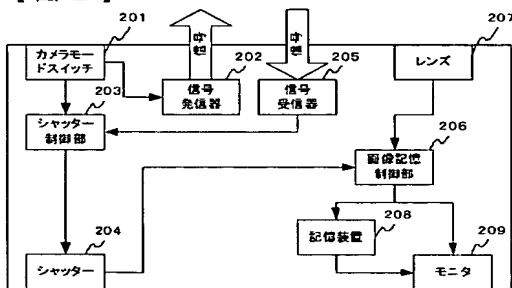
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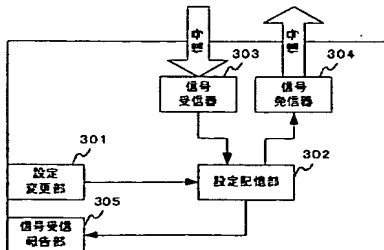
【図 1】

| 端末種類                  | 機 能   |
|-----------------------|---|
| カメラ付き<br>携帯端末         | ・カメラ撮影時に撮影中信号を発信  |
| 一般携帯端末<br>(カメラ有無関係無し) | ・撮影中信号を受けたら撮影拒否信号を送信<br>・撮影中信号を受けたら音や光で本人に知らせる<br>・撮影中信号を無視 |

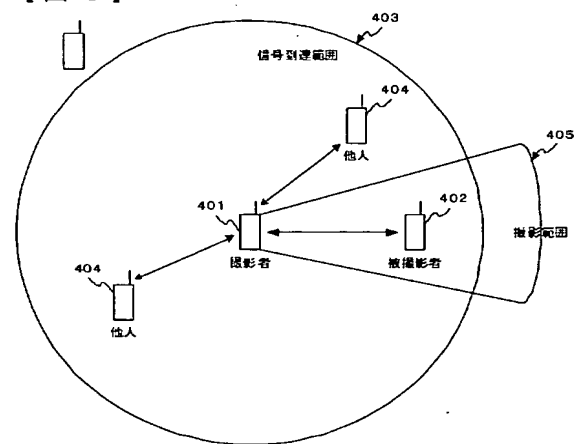
【図 2】



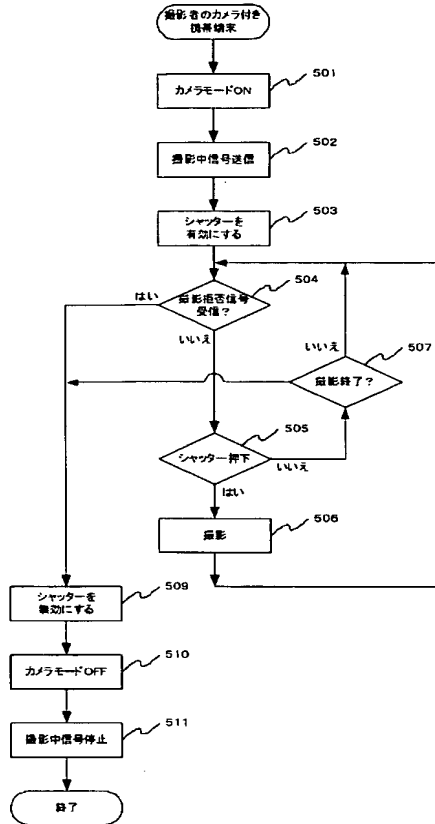
【図 3】



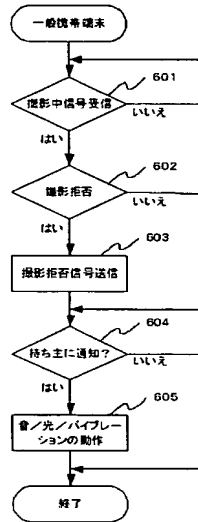
【図 4】



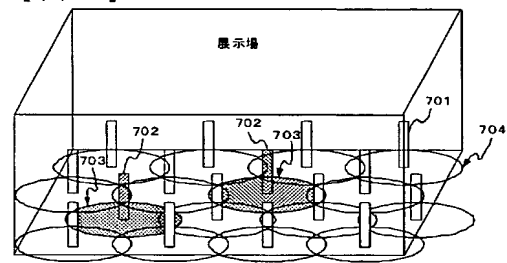
【図 5】



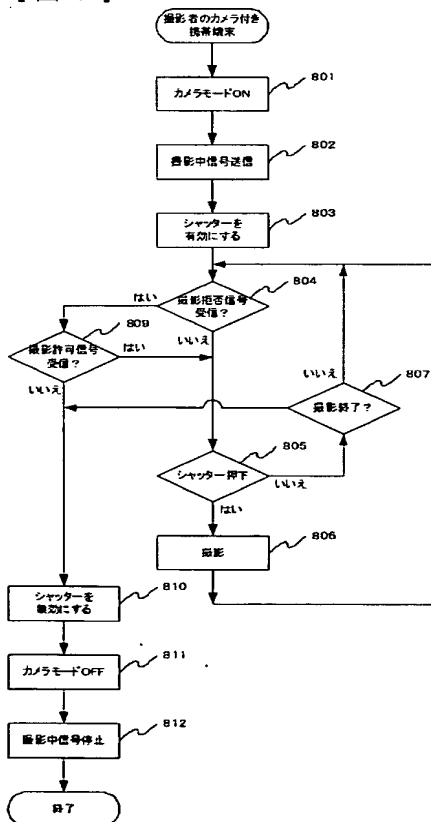
【図 6】



【図 7】



【図 8】



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